CLAIM AMENDMENTS

Please amend claims as follows:

1. (Currently Amended) A computer implemented method for storing data comprising:

receiving a composite data stream from a server;

storing the received composite data stream so that it may be restored to the server, said storing including,

decomposing the composite data stream into a plurality of constituent data streams, the plurality of constituent data streams including at least a first constituent data stream of user data and a second constituent data stream of administrative data, wherein said decomposing includes,

storing a composite data stream map that indicates how to recompose the plurality of constituent data streams into the composite data stream;

segmenting at least one of the plurality of constituent data streams decomposed from the composite data stream;

~~comparing~~ determining which segments resulting from the segmenting match ~~to determine those~~ segments already stored ~~as a result of storing a previous one of said plurality of composite data streams~~; [[and]]

in lieu of storing ~~discarding~~ those of the segments resulting from the segmenting which are determined to ~~have been stored previously~~ match already stored segments, storing pointers to those already stored segments; and

storing those of the segments resulting from the segmenting determined not to match already stored segments.

2. (Canceled).

3. (Canceled).

4. (Currently Amended) The computer implemented method of claim 1, wherein said storing the received composite data stream further comprises:

determining the ~~first of said plurality of~~ second constituent data ~~streams~~ stream is of administrative data that may be restored by regeneration rather than being stored; and

discarding said first constituent data stream.

5. (Previously Presented) The computer implemented method of claim 4 wherein the administrative data is tape markers and/or header information.

6. (Currently Amended) The computer implemented method of claim 1 wherein the storing the received composite data stream comprises segmenting each of the plurality of constituent data streams.

7. (Currently Amended) A computer implemented method for efficiently storing data comprising:

receiving over time, at a storage server having a composite data stream decomposer/recomposer and a segment reuse storage system, a plurality of composite data streams from a server, each of said plurality of composite data streams representing snapshots of data residing at a set of one or more sources taken over said time, wherein the server receives data streams from the client applications, wherein the client applications and/or server insert into the data streams administrative data that is expected upon restore and that if kept in the data streams would result in a relatively low compression efficiency of the segment reuse storage system; and

storing each of said plurality of composite data streams so that it may be restored to the server, said storing including,

decomposing the composite data stream into a plurality of constituent data streams, the plurality of constituent data streams including at least a first constituent data stream of user data and a second constituent data stream of administrative data, wherein said decomposing includes,

storing a composite data stream map that indicates how to recompose the plurality of constituent data streams into the composite data stream; and

storing using segment reuse a set of one or more of said plurality of constituent data streams, said storing using segment reuse including performing the following for each of said set of constituent data streams,

segmenting the constituent data stream,

determining which segments resulting from the segmenting ~~are~~ match segments already stored ~~as a result of storing a previous one of the plurality of composite data streams~~, and

storing only those segments of the constituent data stream that cannot be restored using segments already stored ~~as a result of storing a previous one of said plurality of composite data streams~~.

8. (Canceled).

9. (Canceled).

10. (Currently Amended) The computer implemented method of claim 1, wherein said storing each of said plurality of composite data streams further comprises:

determining the ~~first~~second ~~of said plurality of~~ constituent data ~~streams~~ stream is of administrative data that may be restored by regeneration rather than being stored; and

discarding said ~~first~~second constituent data stream.

11. (Previously Presented) The computer implemented method of claim 10, wherein the administrative data is tape markers and/or header information.

12. (Currently Amended) A computer implemented method for storing data comprising:

receiving, at a storage server having a composite data stream decomposer/recomposer and a segment reuse storage system, a composite data stream from a backup server, wherein the backup server is part of a backup system that includes a client application on a computer coupled to the backup server, said composite data stream representing at least a snapshot of data residing at the computer coupled to said backup server, wherein the client application and/or backup server insert into the composite data stream administrative data that is expected upon restore and that if kept in the composite data stream would result in a relatively low compression efficiency of the segment reuse storage system;

storing the received composite data stream so that it may be restored to the backup server, said storing including,

decomposing the composite data stream into a plurality of constituent data streams, the plurality of constituent data streams including at least a first constituent data stream of user data and a second constituent data stream of administrative data, wherein said decomposing includes,

storing a composite data stream map that indicates how to recompose the plurality of constituent data streams into the composite data stream; and

backing up each of said plurality of constituent data streams separately, said backing up including, applying segment reuse to back up a ~~first~~ set of one or more of said plurality of constituent data streams including,

segmenting at least the first constituent data stream in to current segements;

determining which of the current segments match already stored segments; and

storing only those of the current segments that do not match already stored segments.

13. (Canceled)

14. (Currently Amended) The computer implemented method of claim 13, wherein said backing up includes:

discarding [[a]]the second ~~set of one or more of said plurality of~~ constituent data ~~streams~~ stream because ~~they are~~ it is of administrative data that may be restored using regeneration as opposed to storage.

15. (Currently Amended) An apparatus to back up data comprising:

~~computer hardware including the following components:~~ a storage server including,

an interface agent to receive over time composite data streams from a server representing snapshots of data residing at a set of one or more sources;

a composite data stream decomposer/recomposer, coupled to said interface agent, to decompose composite data streams into their constituent data streams and composite data stream maps, the composite data stream maps indicate how to recompose their corresponding composite data streams from their constituent data streams, the constituent data streams include at least a first constituent data stream of user data and a second constituent data stream of administrative data, and to recompose composite data streams from their constituent data streams and their composite data stream maps;

a map file storage, coupled to said composite data stream decomposer/recomposer, to store the composite data stream maps; and

a segment reuse storage system, coupled to said composite data stream decomposer/recomposer, to perform segment reuse to store and restore ~~the~~ constituent data streams ~~and to restore the constituent data streams to the server.~~

16. (Canceled).

17. (Currently Amended) The apparatus of claim 15 further comprising:

an administrative data regenerator, coupled to said composite data stream decomposer/recomposer, to regenerate data from constituent data streams that was not stored because that data could be restored by regeneration.

18. (Original) The apparatus of claim 17 wherein the administrative data is regenerated in accordance with composite data stream attribute data retrieved from a configuration file.

19. (Currently Amended) The apparatus of claim 15 wherein the composite data stream decomposer/recomposer is a machine-readable medium having stored thereon a set of instructions, which when executed by a set of one or more processors, cause the operations of the composite data stream decomposer/recomposer to be performed.

20. (Currently Amended) The apparatus of claim 15 wherein the composite data stream decomposer/recomposer is an application specific integrated circuit.